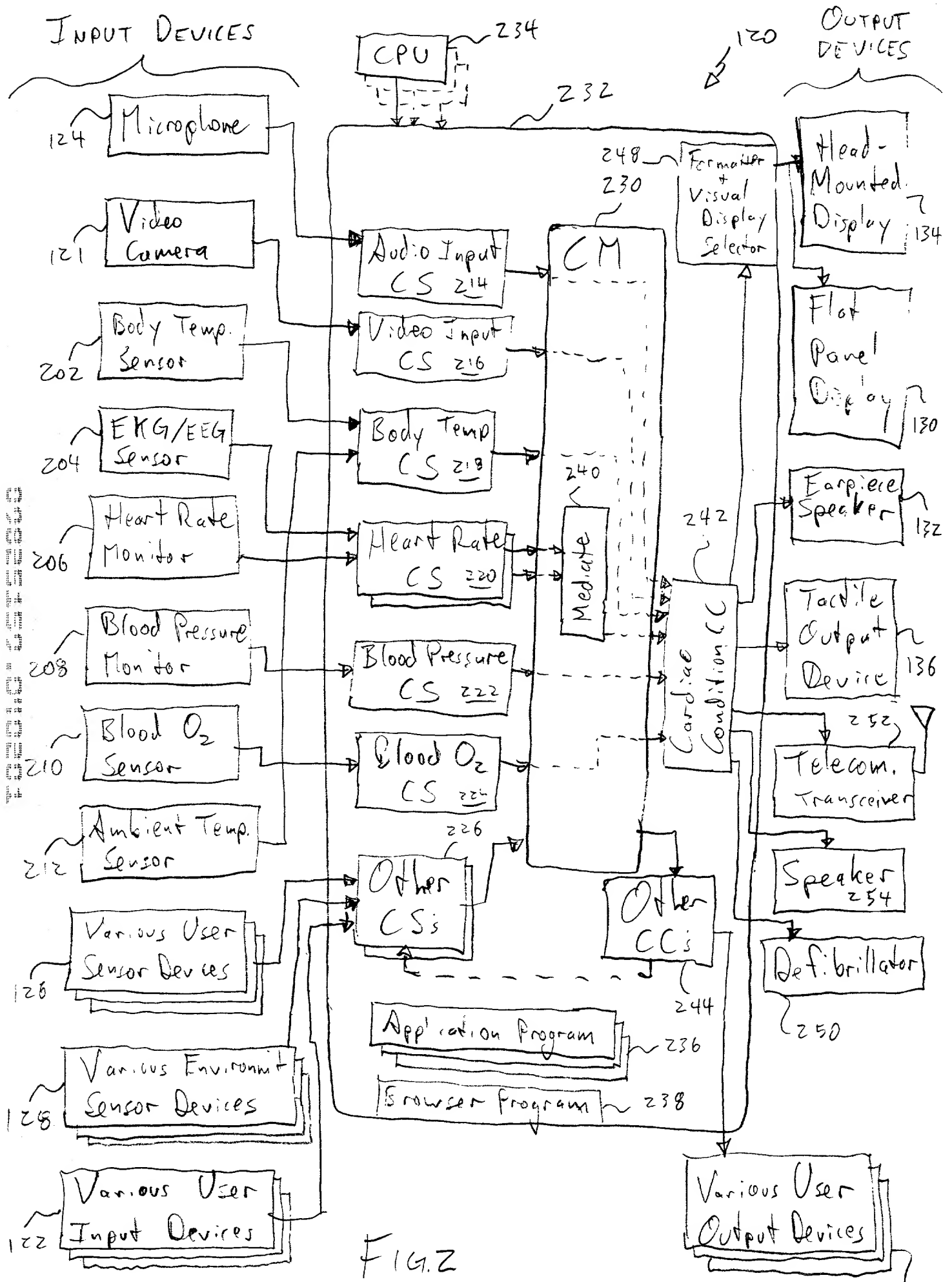


**Fig. 1**



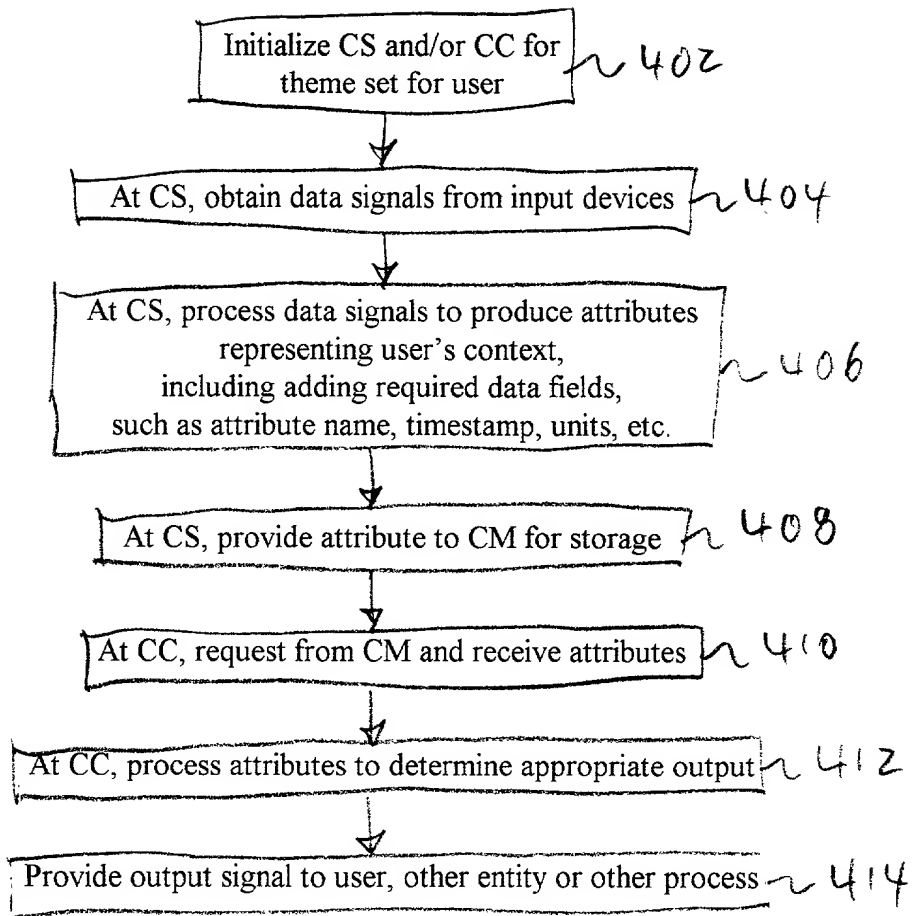


FIG 4

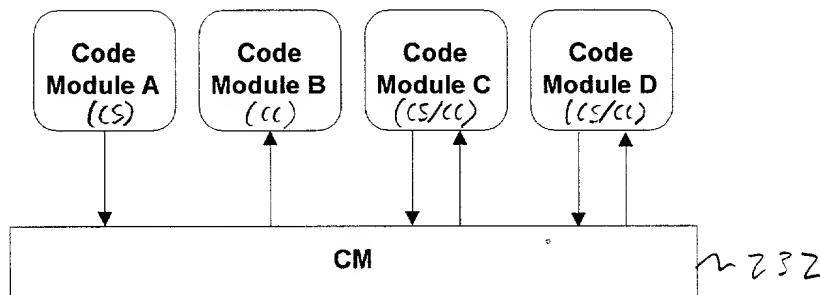


FIG 3

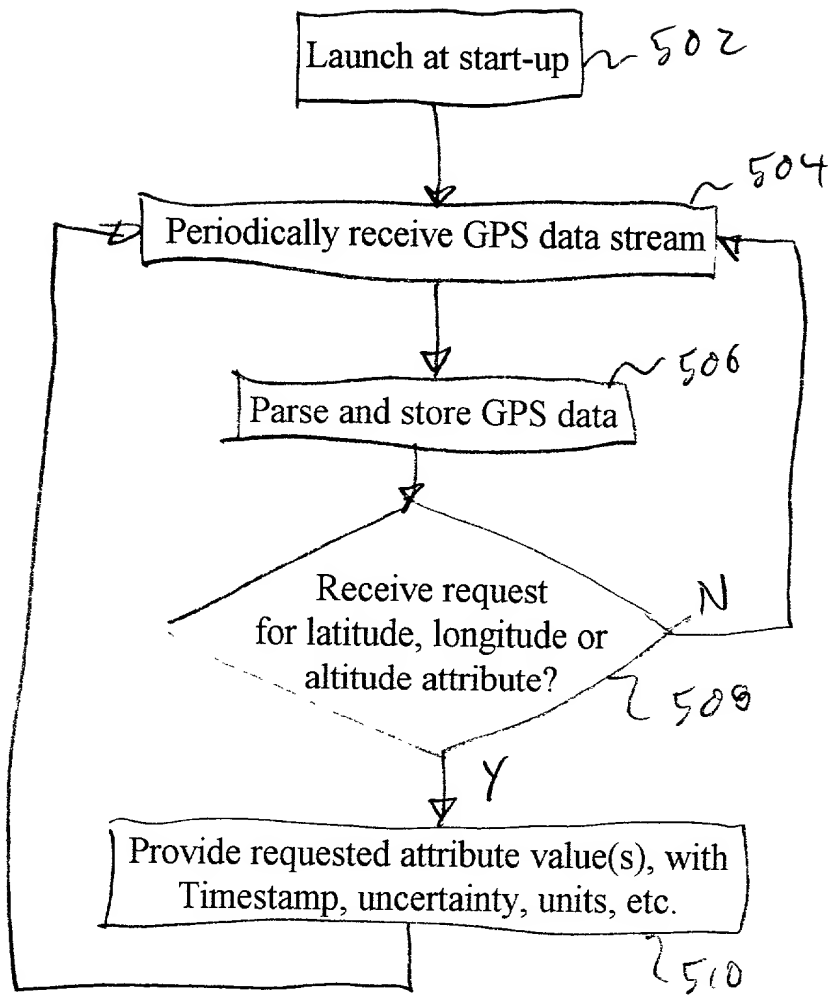


FIG 5A

Name	521
Latitude (Value)	522
Uncertainty	524
Timestamp	526
Units	528
Format Version/Flags	530

520

FIG 5B

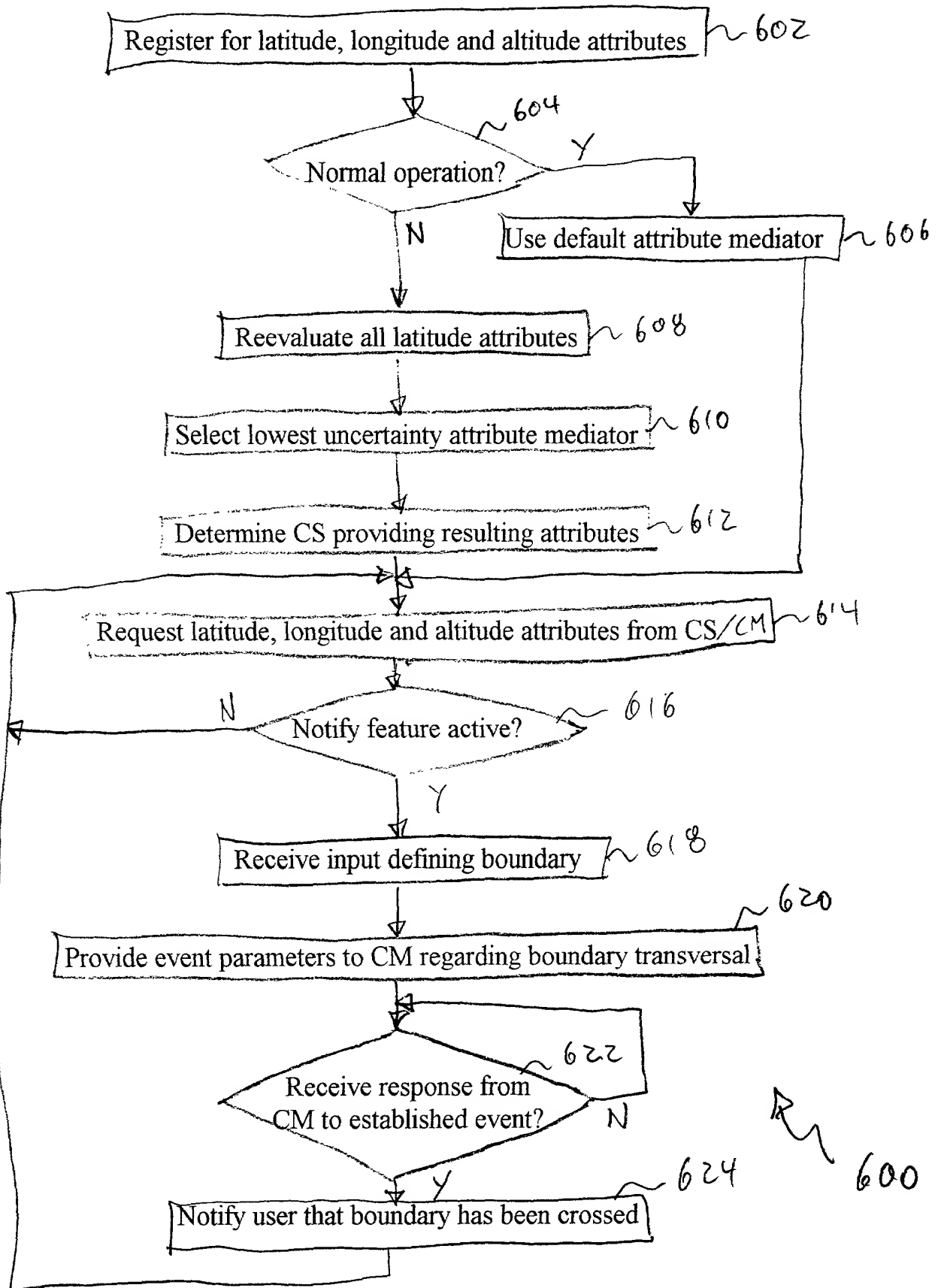


FIG 6

704

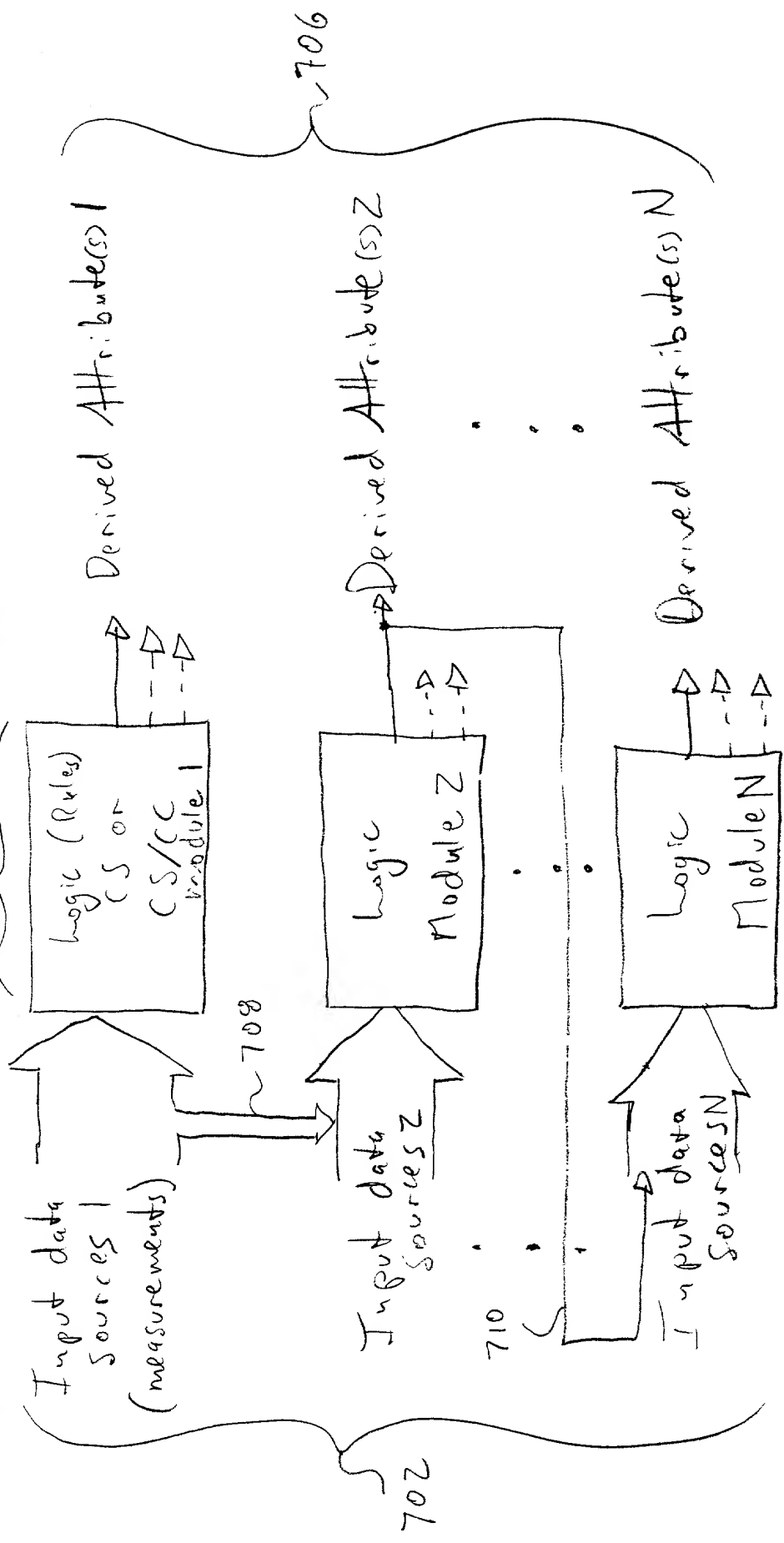


FIG 7

**User.**

Desired\_privacy\_level  
 Interruptibility  
 Speed  
 Direction  
 Acceleration  
 Availability.  
   Cognitive\_availability  
   Tactile\_availability  
   Manual\_availability  
   Visual\_availability  
   Oral\_availability  
   Auditory\_availability  
 Proximity.<Item or place name>  
 Mood.

Happiness  
 Sadness  
 Anger  
 Frustration  
 Confusion

**Activity.**

Driving  
 Eating  
 Running  
 Sleeping  
 Talking  
 Typing  
 Walking

**Location.**

Place\_name  
 Latitude  
 Longitude  
 Altitude  
 Room  
 Floor  
 Building  
 Address  
 Street  
 City  
 County  
 State  
 Country  
 Postal\_Code

Destination. (same as User.Location.)

**Physiology.**

Pulse  
 Body\_temperature  
 Blood\_pressure  
 Respiration

**Person.**<name or ID>. (same as User.)

**Platform.****UI.**

Oral\_input\_device\_availability  
 Manual\_input\_device\_availability  
 Tactile\_output\_device\_availability  
 Visual\_output\_device\_availability  
 Auditory\_output\_device\_availability

**Platform. (continued)****CPU.**

Load  
 Speed

**Memory.**

Total\_capacity  
 Used

**Storage.**

Total\_capacity  
 Used

**Connectivity.**

Connection\_status  
 Connection\_speed  
 Connection\_type/device  
 Connection\_activity

**Power.**

Power\_source  
 Power\_level

**Environment.****People.**

Nearest  
 Number\_present  
 Number\_close

**Local.**

Time  
 Date  
 Temperature  
 Pressure  
 Wind\_speed  
 Wind\_direction  
 Absolute\_humidity  
 High\_forecast\_temperature  
 Low\_forecast\_temperature  
 People\_present  
 Ambient\_noise\_level  
 Ambient\_light\_level  
 Days.<previous or future>.  
   High\_temperature  
   Low\_temperature  
   Precipitation\_type  
   Precipitation\_amount

Place.<place name>. (same as Environment.Local)

**Application.****Mail.**

Available  
 New\_messages\_waiting  
 Messages\_waiting\_to\_be\_sent

**Phone.**

Available  
 In\_use  
 On/off  
 Notification\_mechanism  
 Call\_incoming  
 Caller\_ID

**Sound\_recorder.**

Available  
 Recording

## User Setting

### Mental Context

Meaning

Cognition

Divided User Attention

Task Switching

Background Awareness

Solitude

Privacy

Desired Privacy

Perceived Privacy

Social Context

Affect

### Physical Situation

Body

Biometrics

Posture

Motion

Physical Encumbrment

Senses

Eyes

Ears

Tactile

Hands

Nose

Tongue

Workload demands/effects

Interaction with computer devices

Interaction with people

Physical Health

### Environment

Time/Space

Objects

Persons

Audience/Privacy Availability

Scope of Disclosure

Hardware affinity for privacy

Privacy Indicator for User

Privacy Indicator for Public

Watching Indicator

Being Observed Indicator

### Ambient Interference

Visual

Audio

Tactile

## Computer

Power

Configuration

User Input Systems

Hand/Haptic

Keyboard/Keystrokes

Voice/Audio

Eye Tracking

Cursors

Axis

Resolution

Selection

Invocation

Accelerators

Output Systems

Visual

Resolution

Audio

Public/Private

Haptic

External Resources

I/O devices

Connectivity

Data

Quantity/State

Urgency/Importance

Use of Prominence

Modality

Sensitivity/Purpose

Privacy Issues

Use of Association

Use of Safety

Source/Ownership

Types

User generated

Other computers or people

Sensor

PC State

Use of Association

Fig 9



Various Content 1070

Thematic Response Computing Device 1000

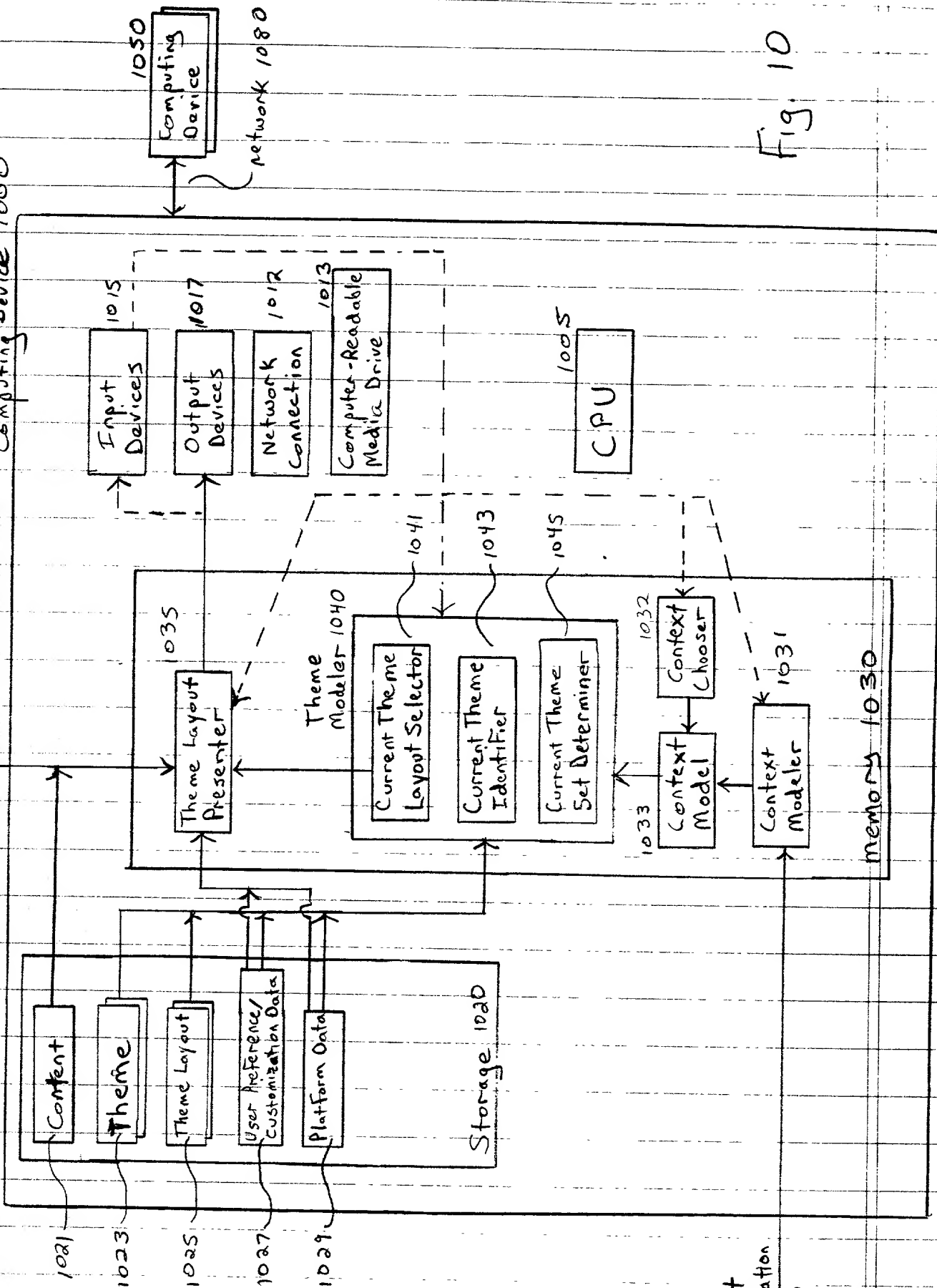


Fig. 10

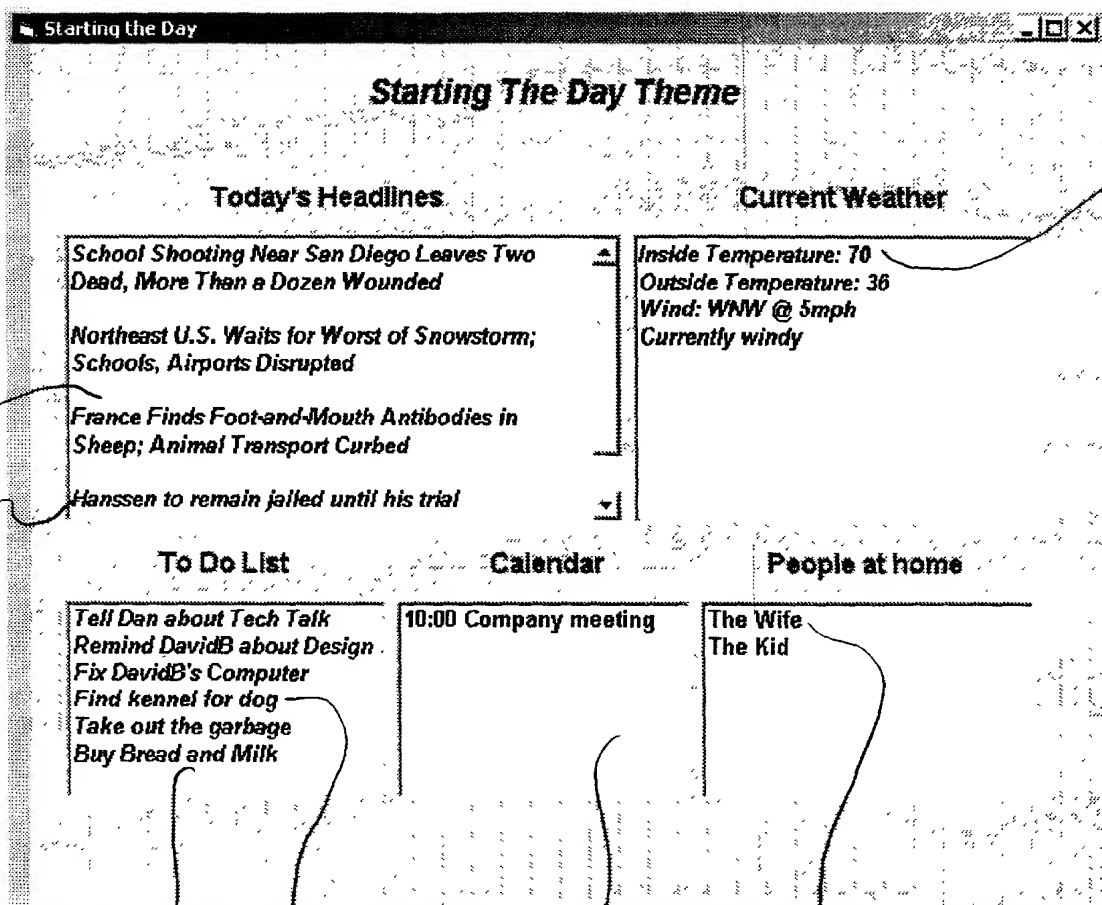


Fig. 11A

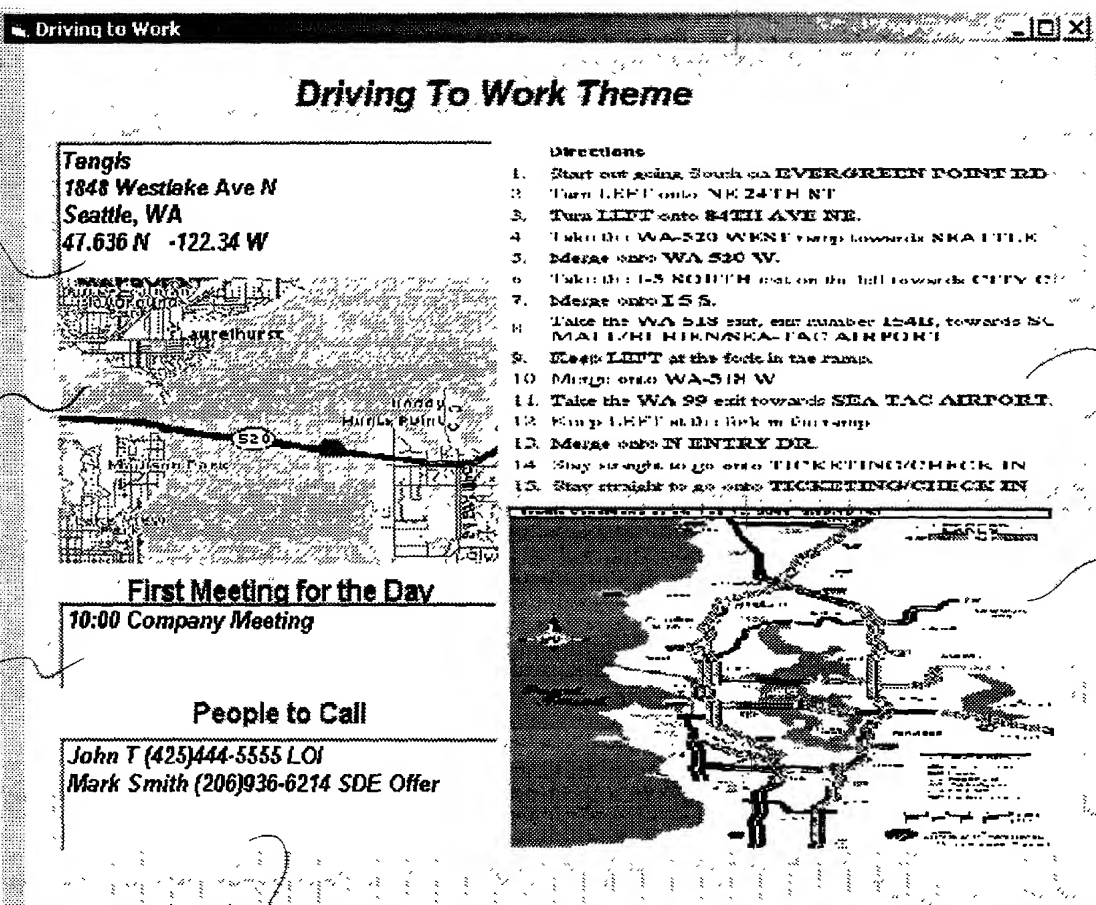


Fig. 11B

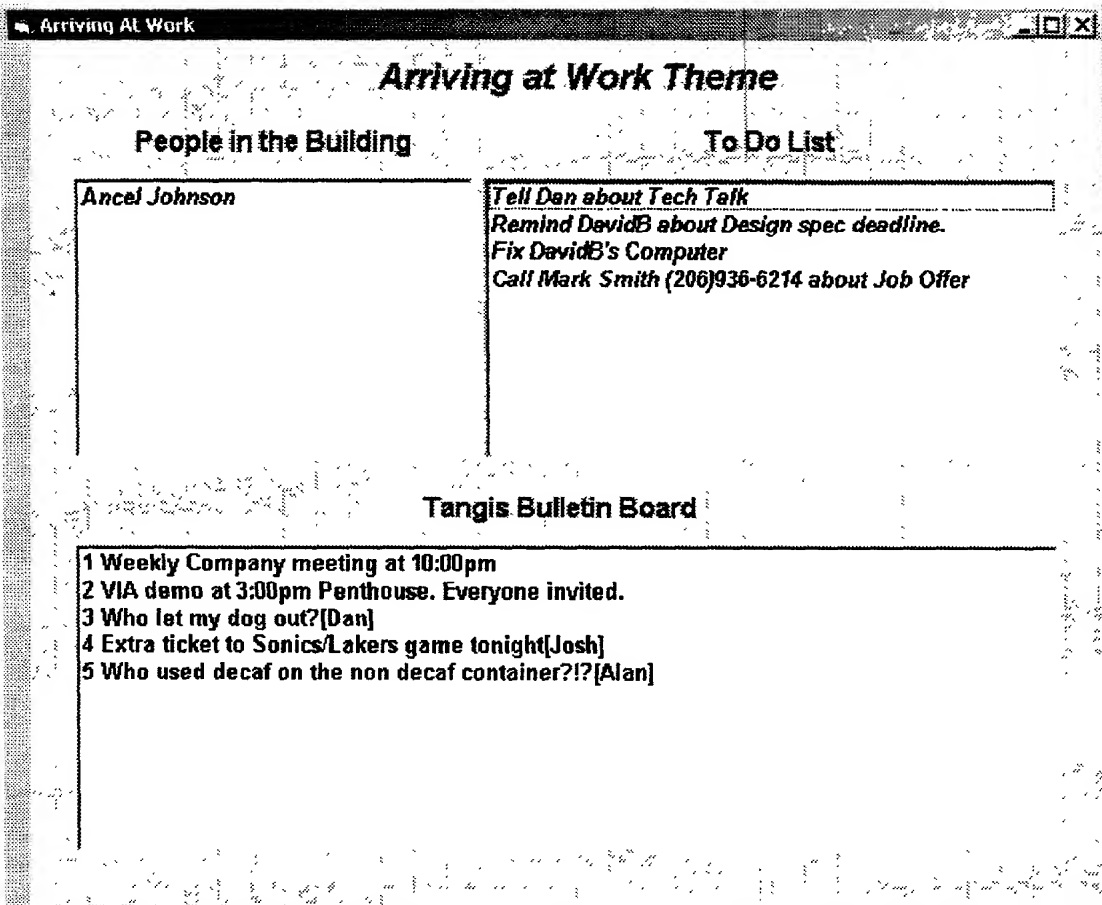


Fig. 11C

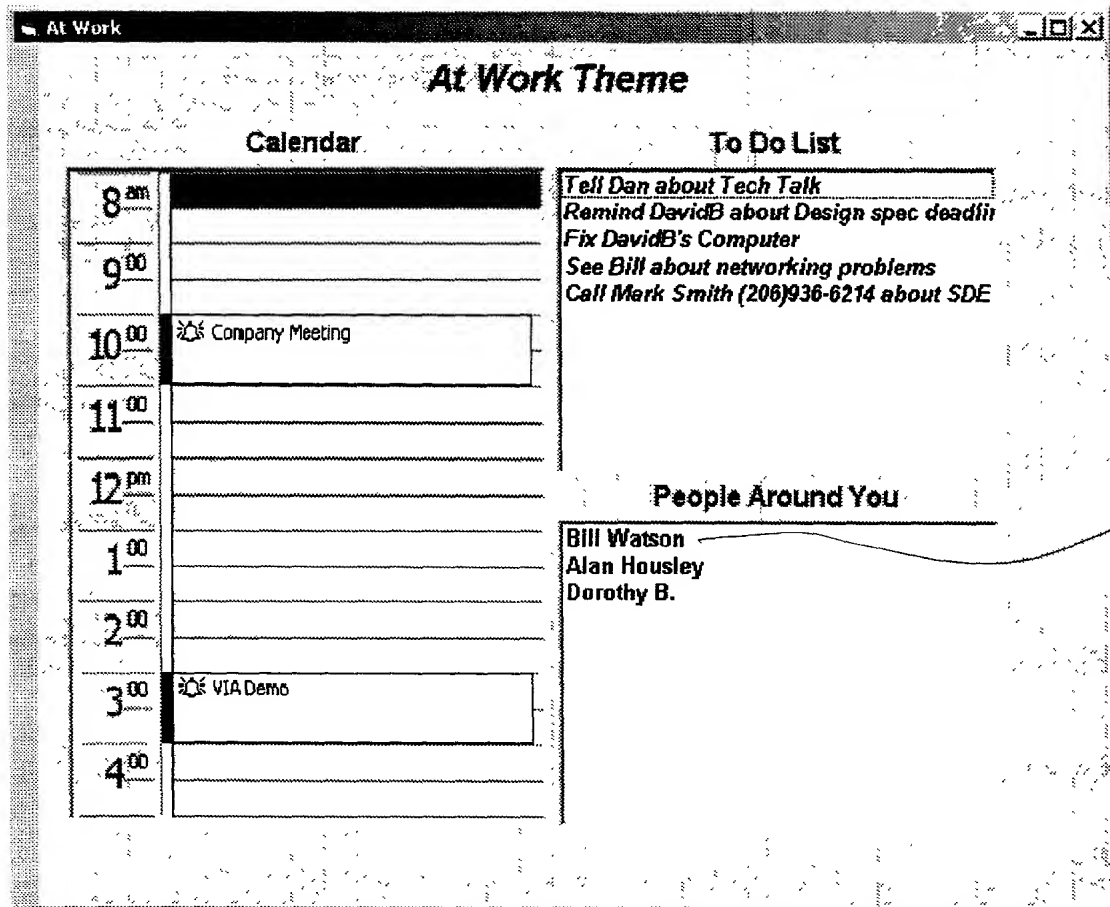


Fig. 11D

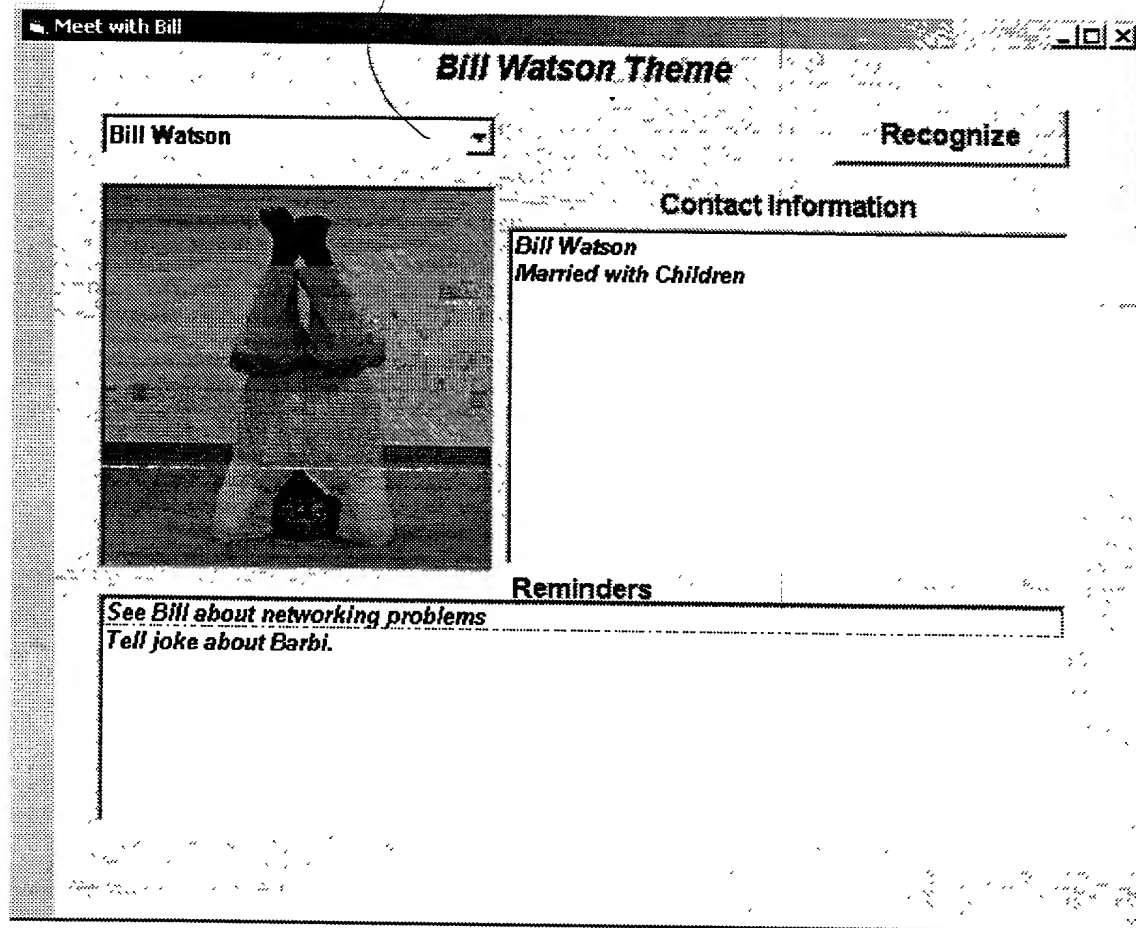


Fig. 11E

Company Meeting

## Meeting Theme

Things to bring up	People Present
<p><b>Tell group what you did last week</b></p> <p>Tell group what you plan to do this week</p> <p>Tell group about your new invention.</p> <p>Tell group about your upcoming skiing trip.</p> <p>Kudos for Stan and Dorothy for finishing report</p>	<p>Aaron Graves</p> <p>Alan Housley</p> <p>Ancel Johnson</p> <p>Bill Watson</p> <p>Brian Rose</p> <p>Cesar Alvarez</p> <p>Dan Newell</p> <p>David Jukes</p> <p>Dorothy B.</p> <p>Jaquie T.</p> <p>Jeff Fried</p> <p>Jim Roberts</p> <p>Johnson A.</p> <p>Josh Freedman</p> <p>Kanisha Patel</p> <p>Ken Abott</p> <p>Lisa Davis</p> <p>Molly Fitch</p> <p>Scott Price</p> <p>Stan Emert</p>
<p style="text-align: center;"><b>Notes</b></p> <p>Finished coding Turing Machine on Monday.</p> <p>Did bug bash on Tuesday.</p> <p>Survived an earthquake on Wednesday.</p> <p>Worked on CTK demo rest of last week</p> <p>Continuing work on CTK demo rest of this week</p>	

Fig. 11F

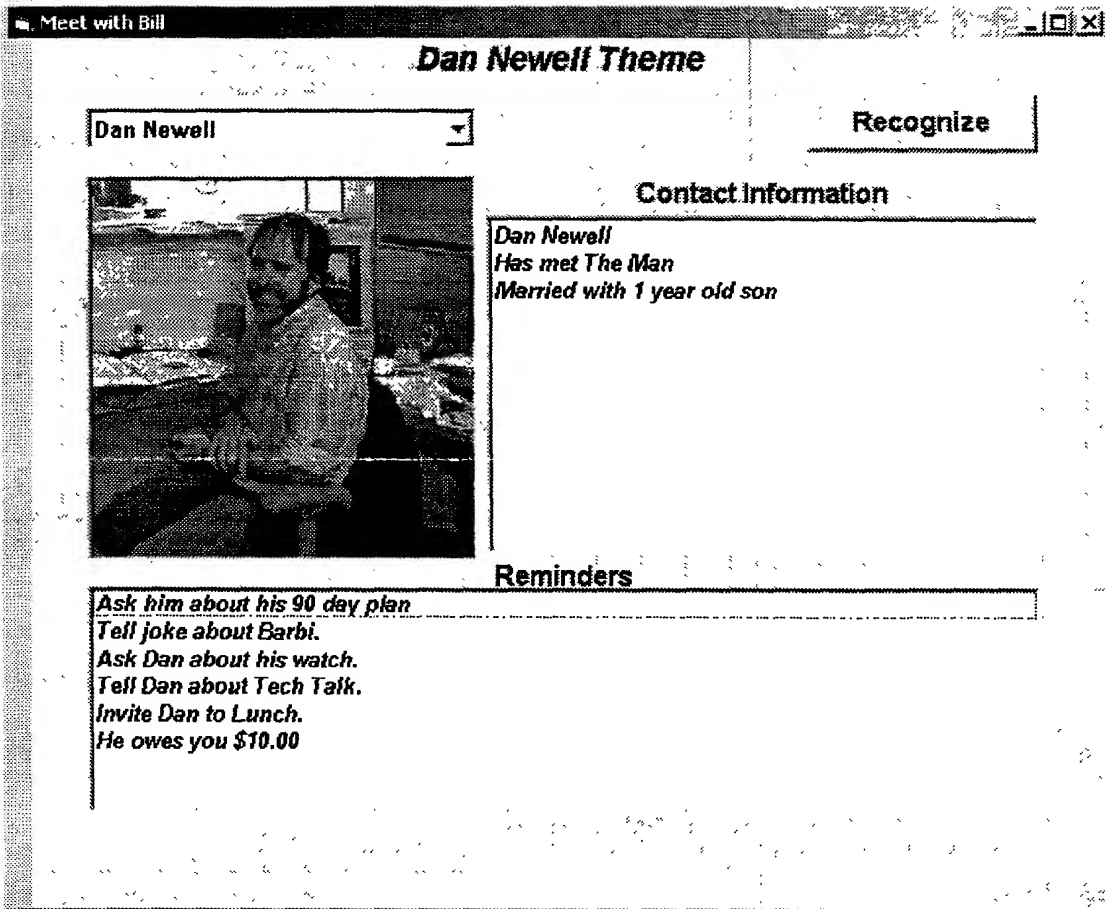


Fig. 11G





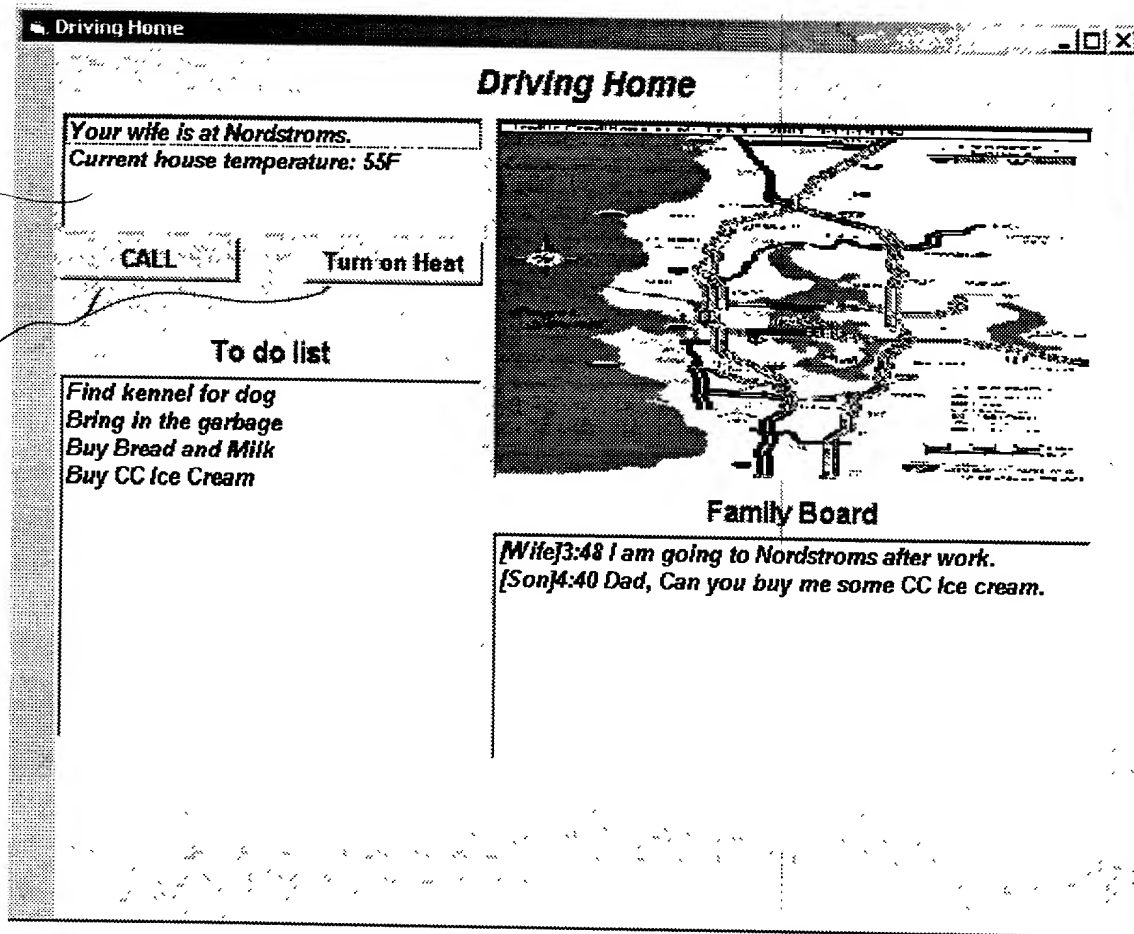
Repairing a PC

### Repairing a PC Theme

Computer Equipment: **Josh's Computer**

Description	Notes
<b>Description</b> Dell XPS 4000 Purchase Date: 11/20/2000 Tangis Tag: PC001	<b>Currently inoperative</b> Josh noticed a loud noise coming from the hard disk. He said it might be a problem with the disk's brake pads. If he mentions this again, humor him.
<b>Software Installed</b> Office 2000 Visual Studios 6.0 MS Entertainment Pack Boeing Marketing Tutorial: How to talk like a techie	
<b>Hardware Installed</b> Creative Sound Blaster 10.0 card Ricoh 32X CDRW MS USB Microphone Intel TR1688 100Mbps Token Ring	

Fig. 11 I



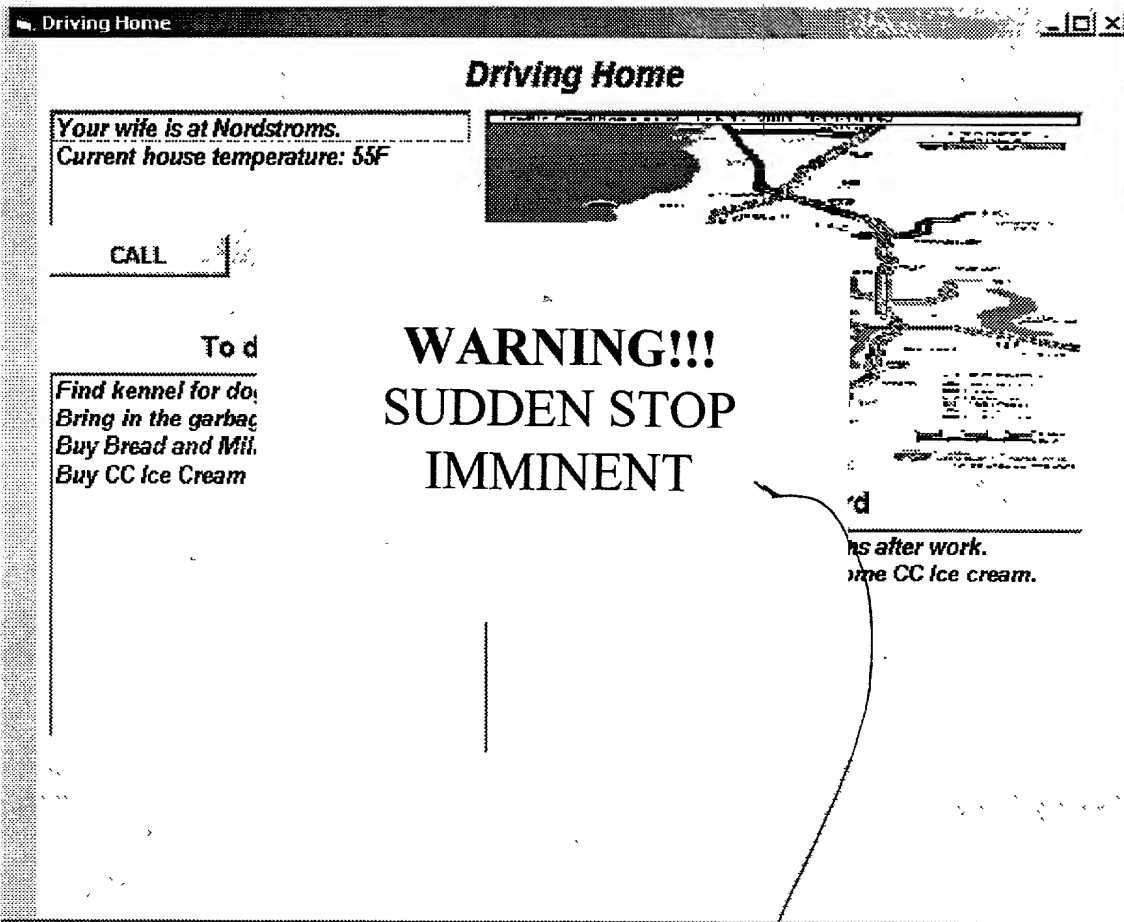


Fig. 11K

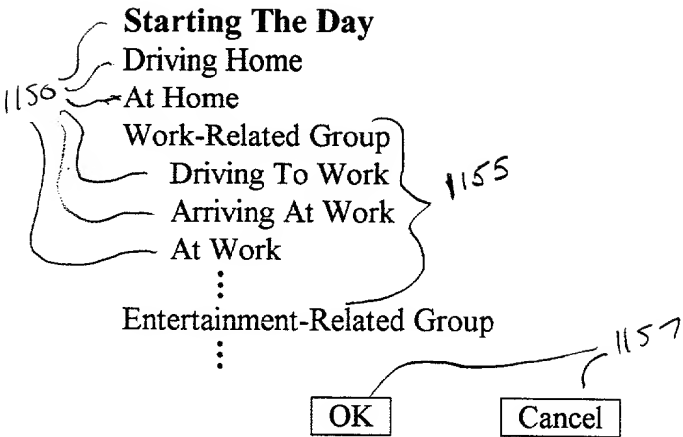
1190

Arriving Home	
<b>To do list</b> Find kennel for dog. Bring in the garbage. Help Junior with Homework.	<b>What's on TV</b> 07:00 Komo TV Local News (4) 07:30 Wall Street Week (9) 08:00 Survivor III (7) 09:00 X-Files (13) 10:00 Big Apple (7)
<b>Family Board</b> [Spouse]3:48 I am going to Nordstroms after work. [Son]4:40 Dad, Can you buy me some CC Ice cream. [Spouse]5:15 I'll be home at around 6:30. Get dinner. [You]5:15 Sure Son. [You]6:00 I'm home.	<b>People At Home</b> The Wife The Kid

Fig. 11L

Example Current Theme Selection

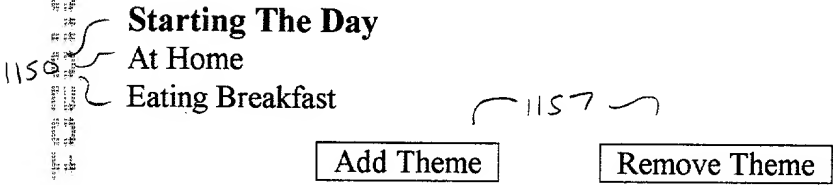
*Select A New Current Theme*



*Figure 11M*

Example Current Theme Set Modification

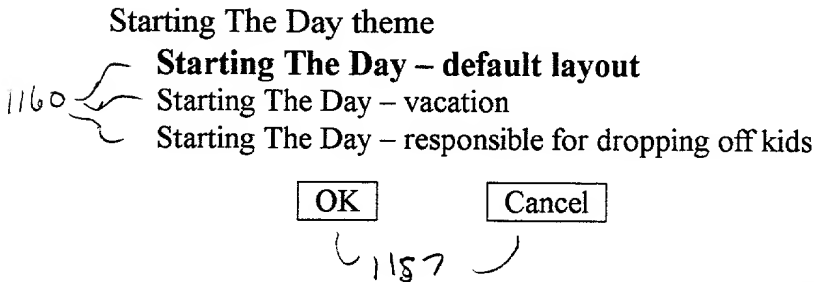
*Current Theme Set*



*Figure 11N*

Example Current Theme Layout Selection

*Select A New Current Theme Layout*



*Figure 11O*

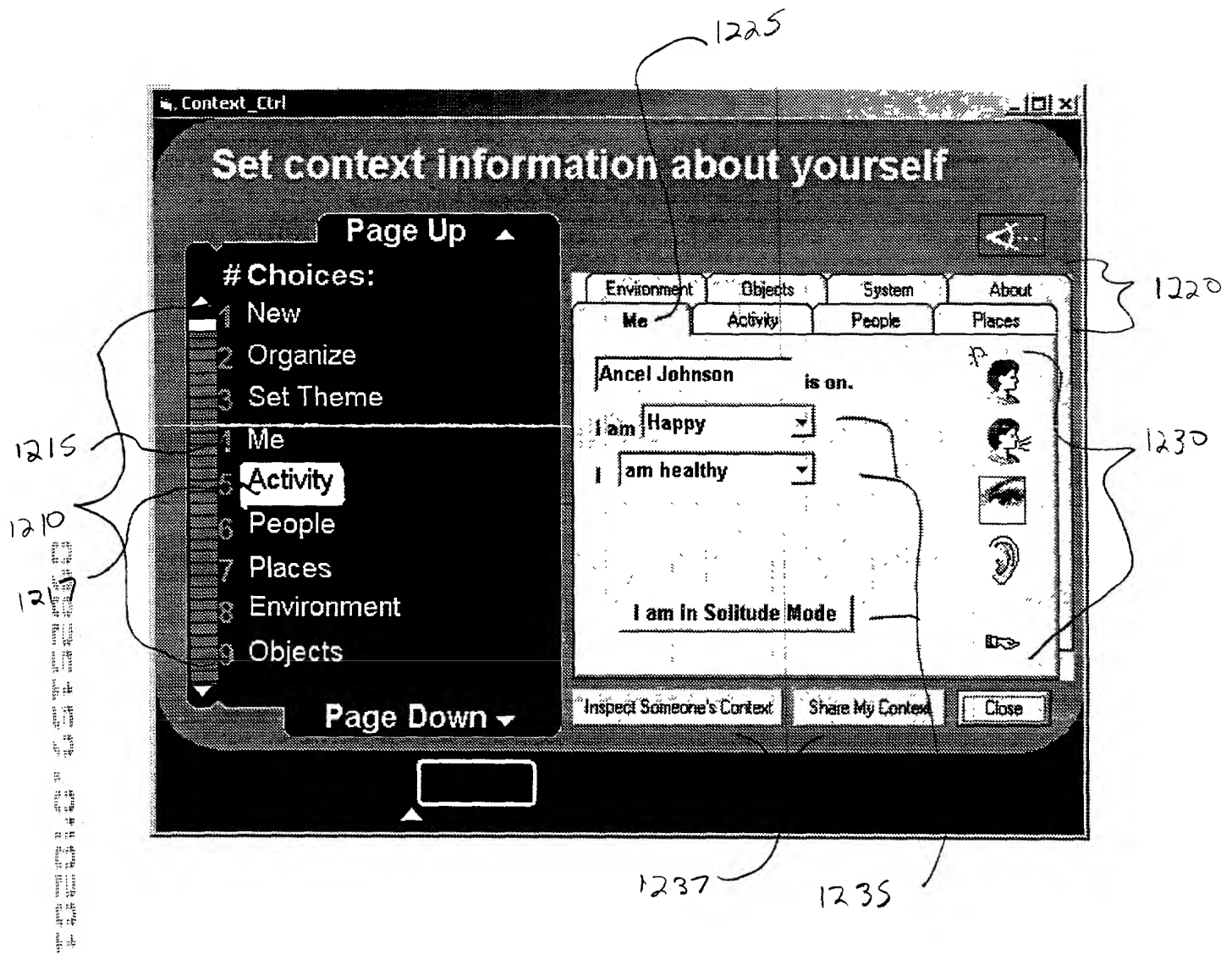


Fig. 12A

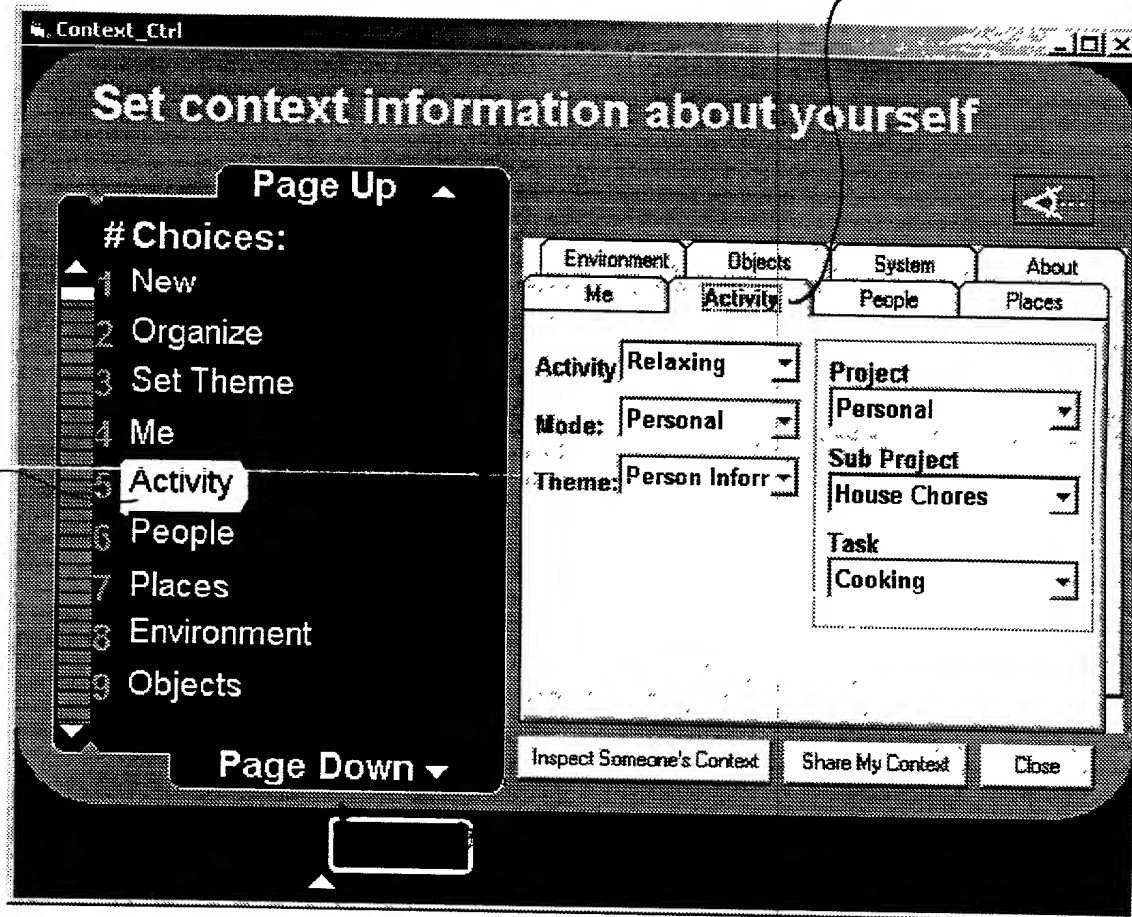


Fig. 12B



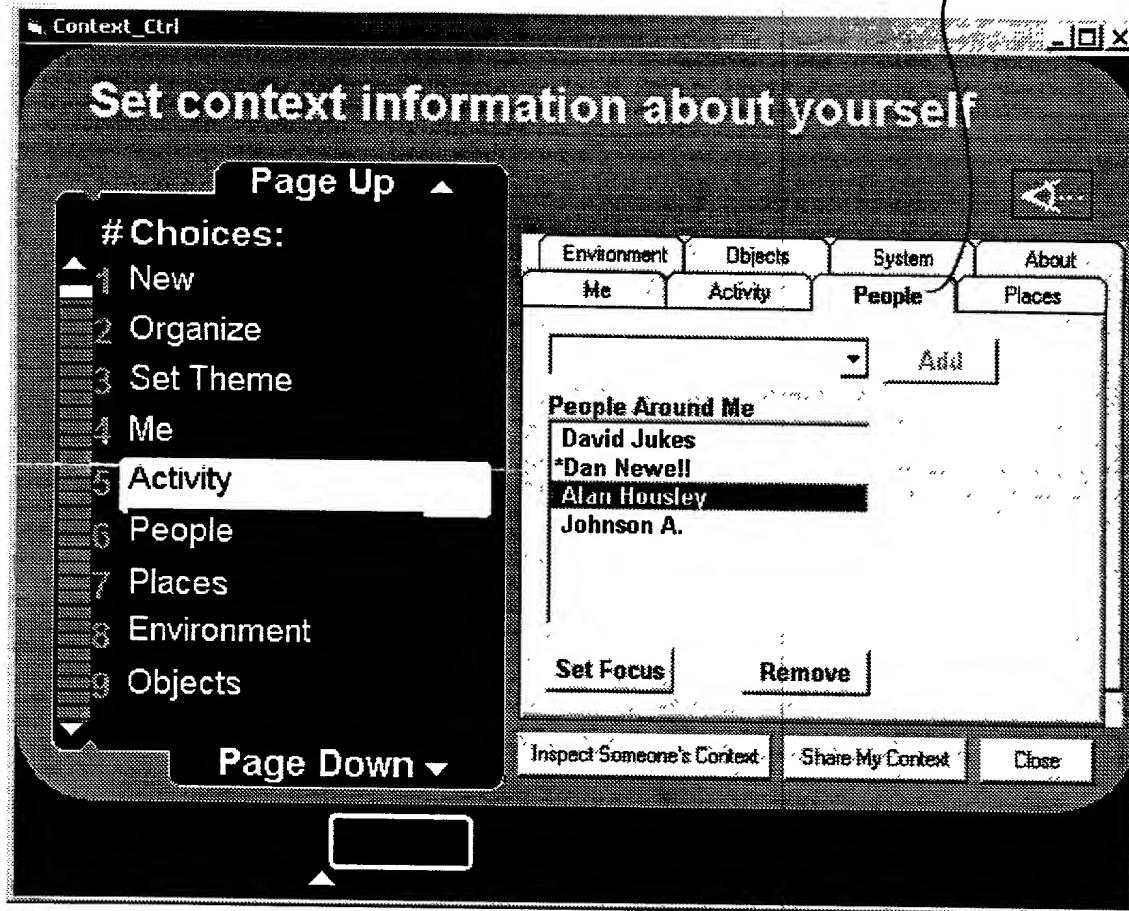


Fig. 12C

Context\_Ctrl

## Set context information about yourself

Page Up ▲

# Choices:

- 1 New
- 2 Organize
- 3 Set Theme
- 4 Me
- 5 Activity
- 6 People
- 7 Places
- 8 Environment
- 9 Objects

Page Down ▼

Environment Objects System About

Me Activity People Places

Location Jim's office

LAT 47.636 N LONG -122.34 W

room  
1848 Westlake Ave N  
Seattle, WA

Destination Tangis

Inspect Someone's Context Share My Context Close

1242

Fig. 12D

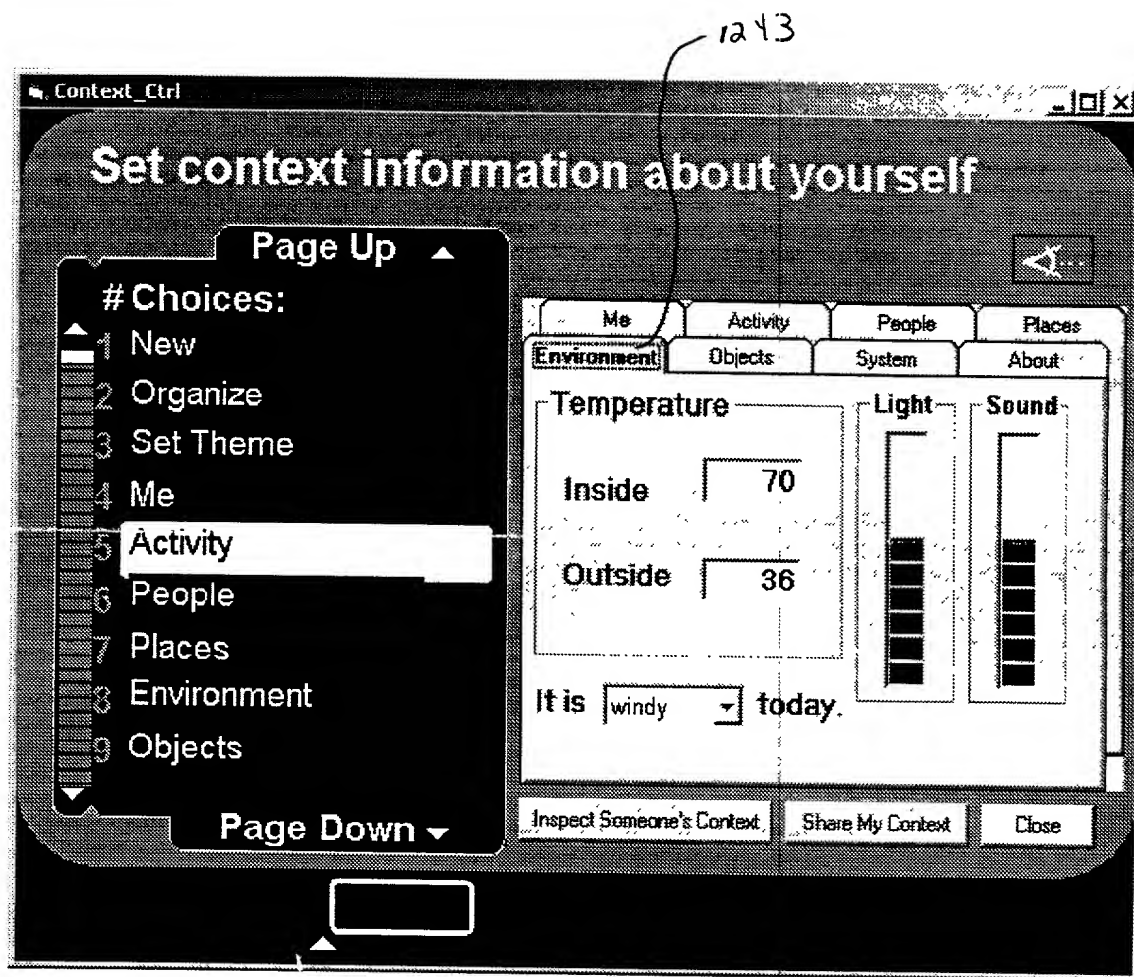


Fig. 12E

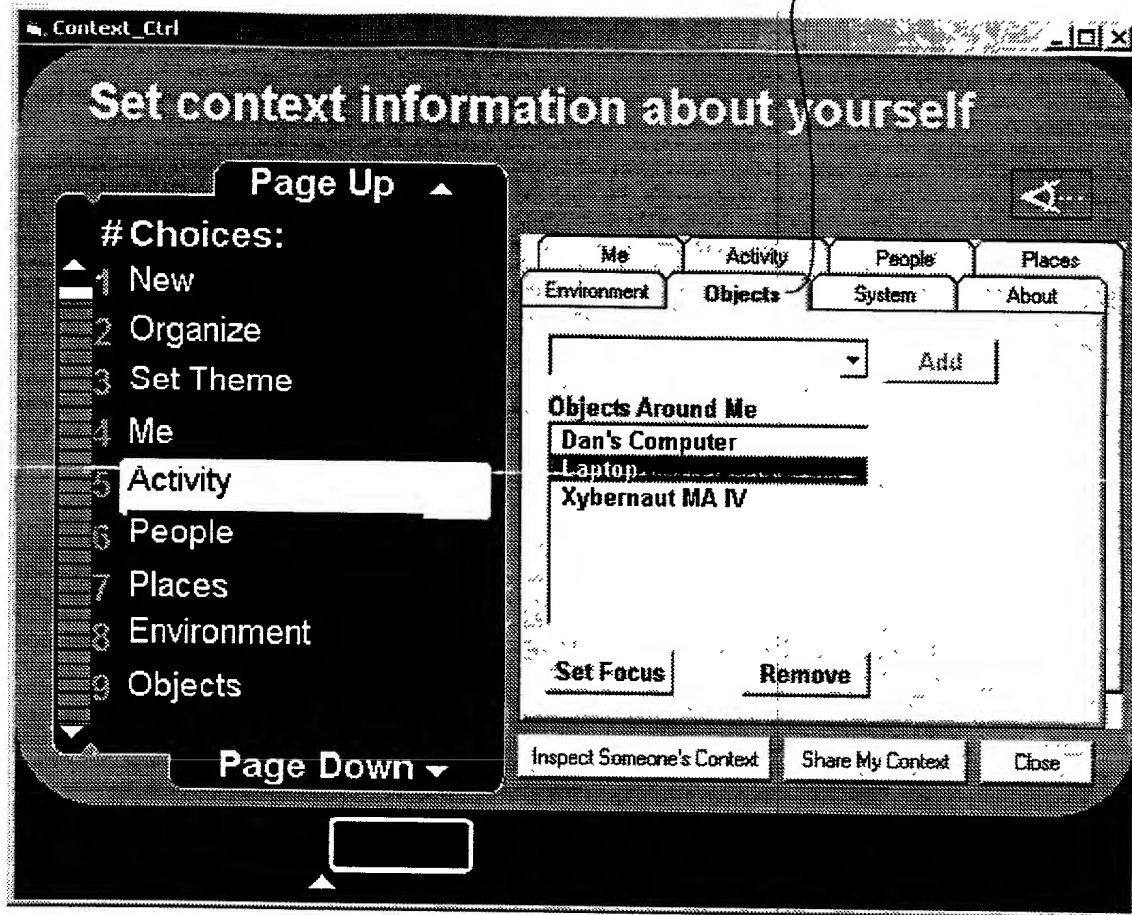


Fig. 12F

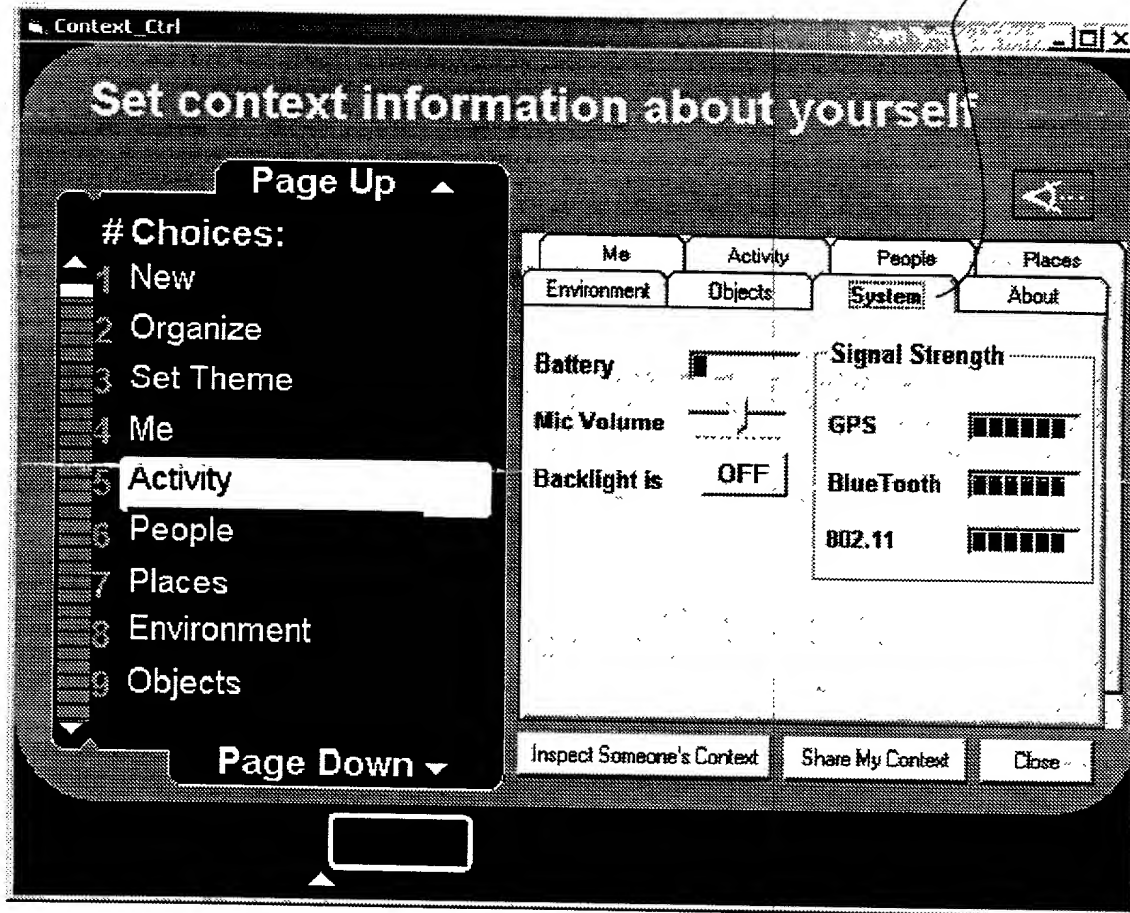


Fig. 12G

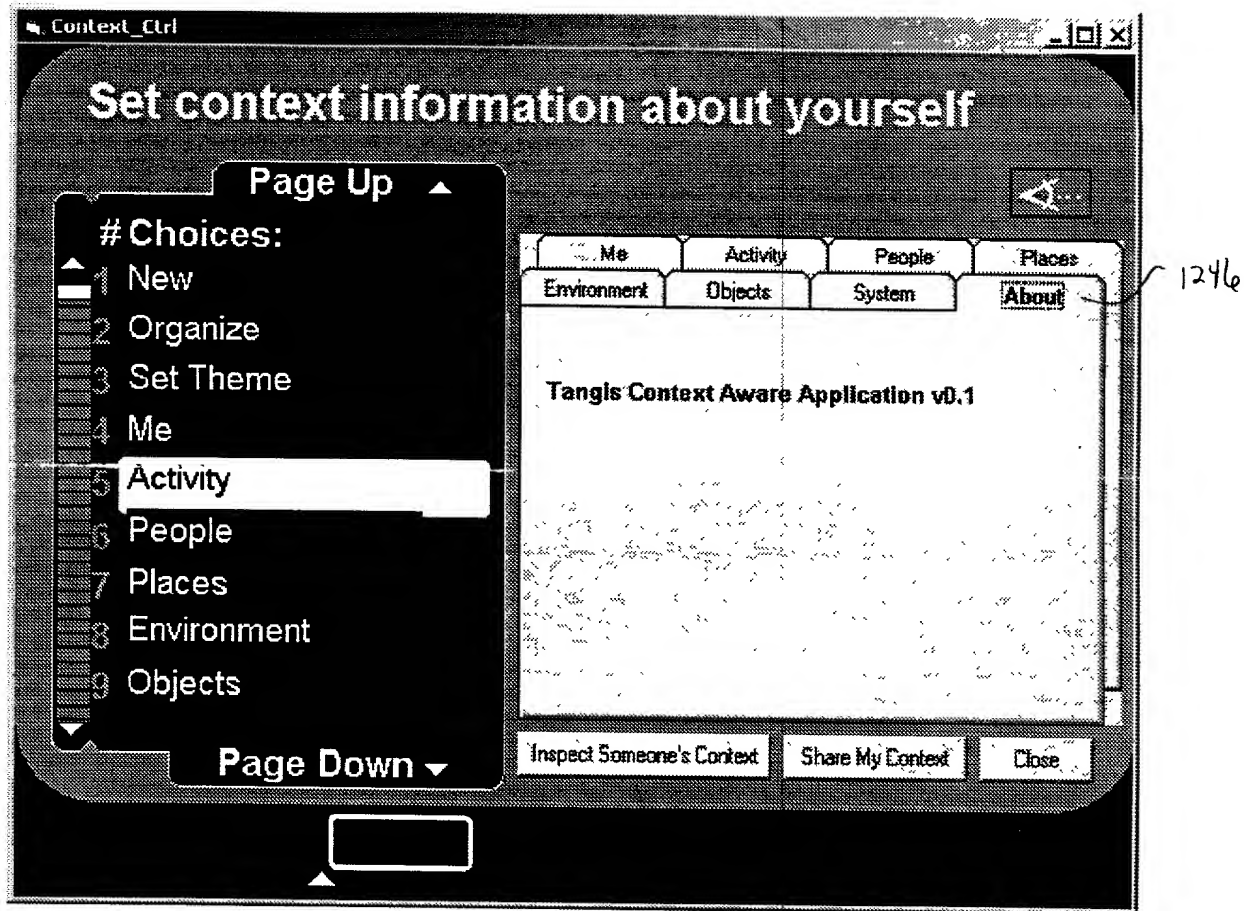
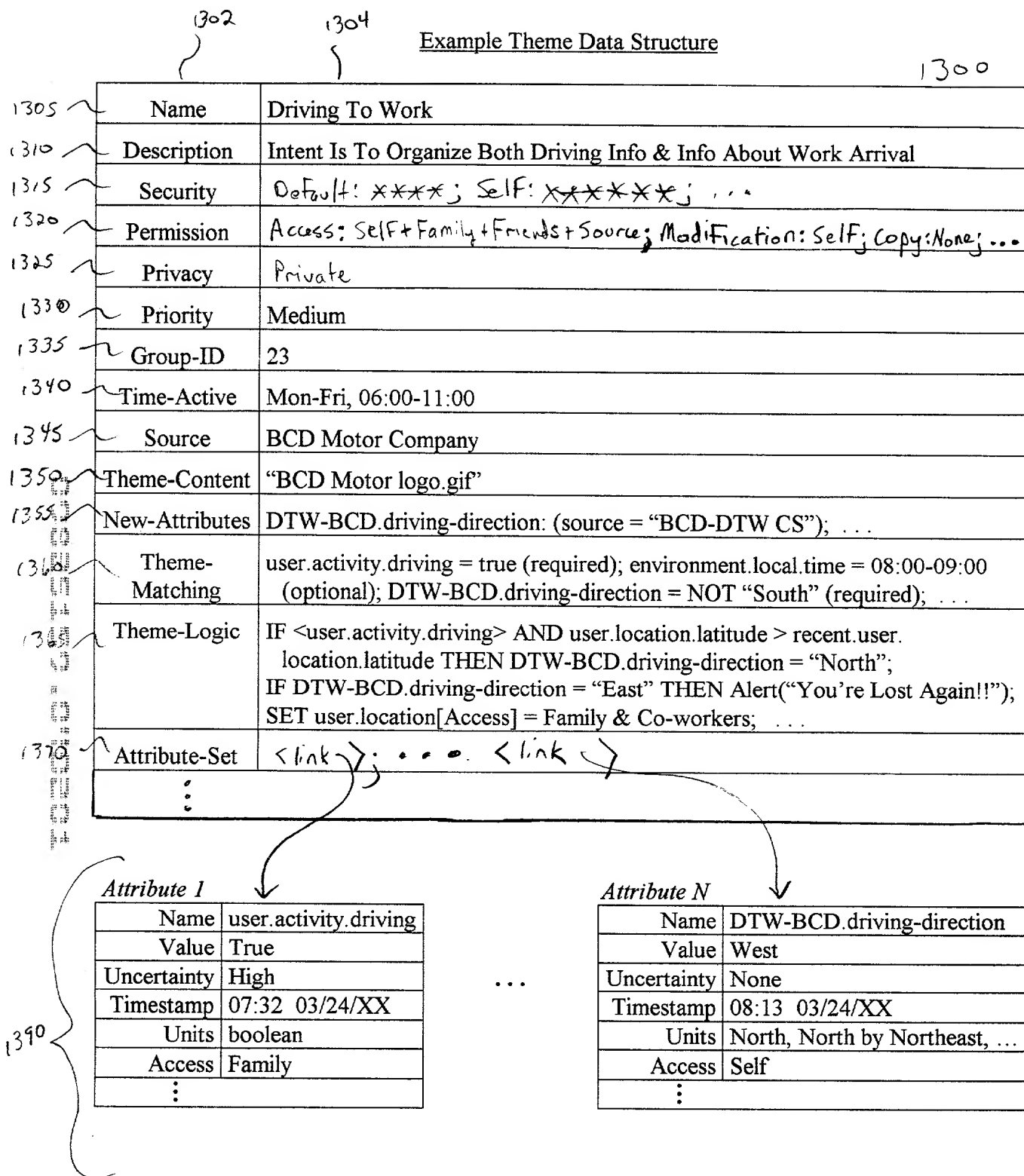


Fig. 12H



**Figure 13**

Theme Server computing device 1400

Theme User computing device 1450

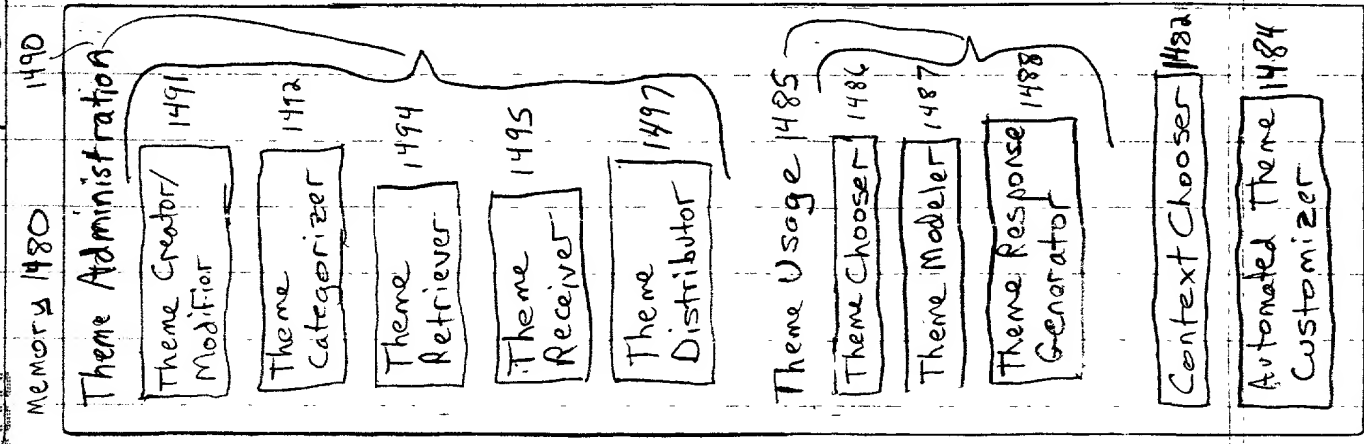
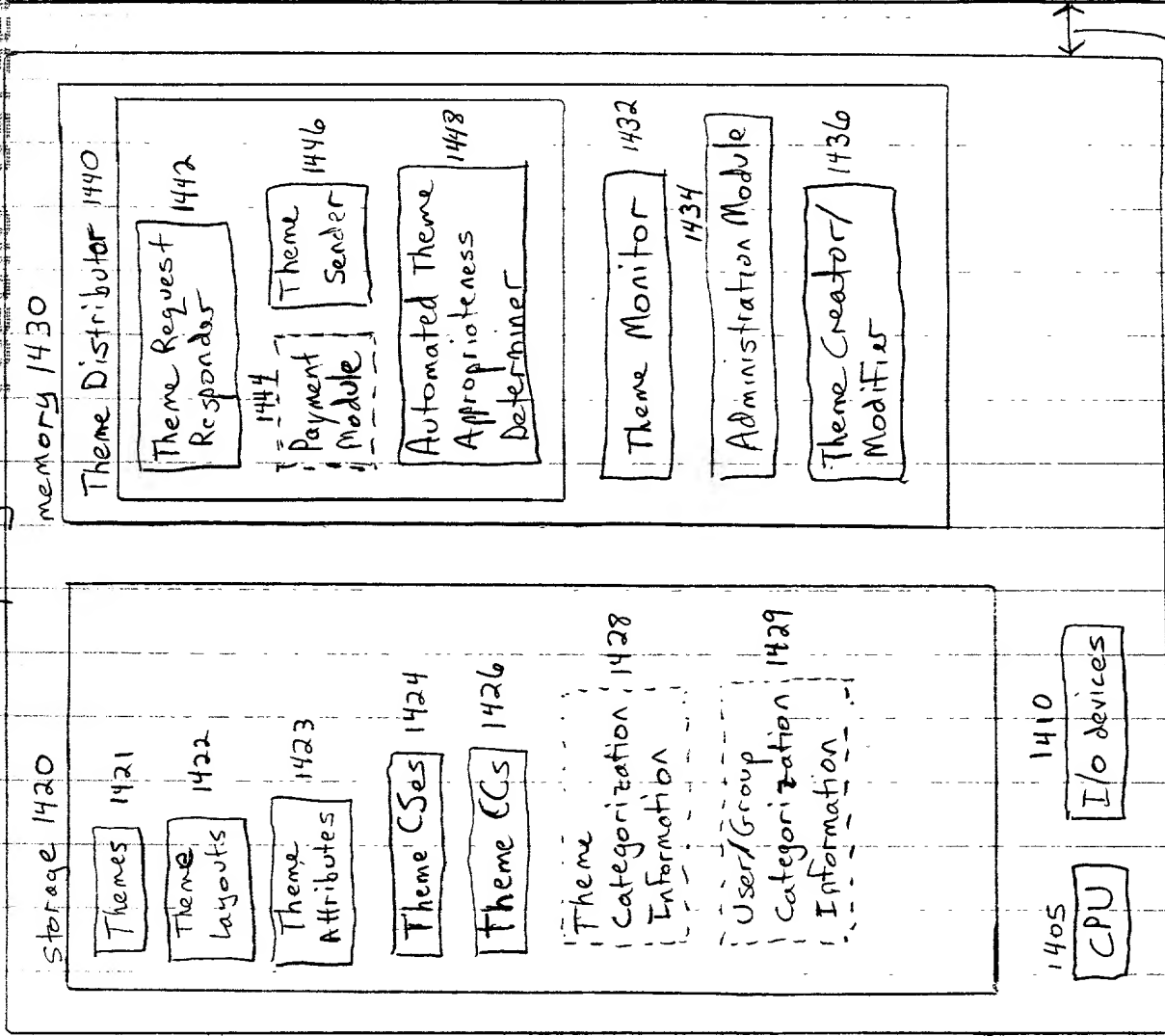


Fig. 14



Fig. 15

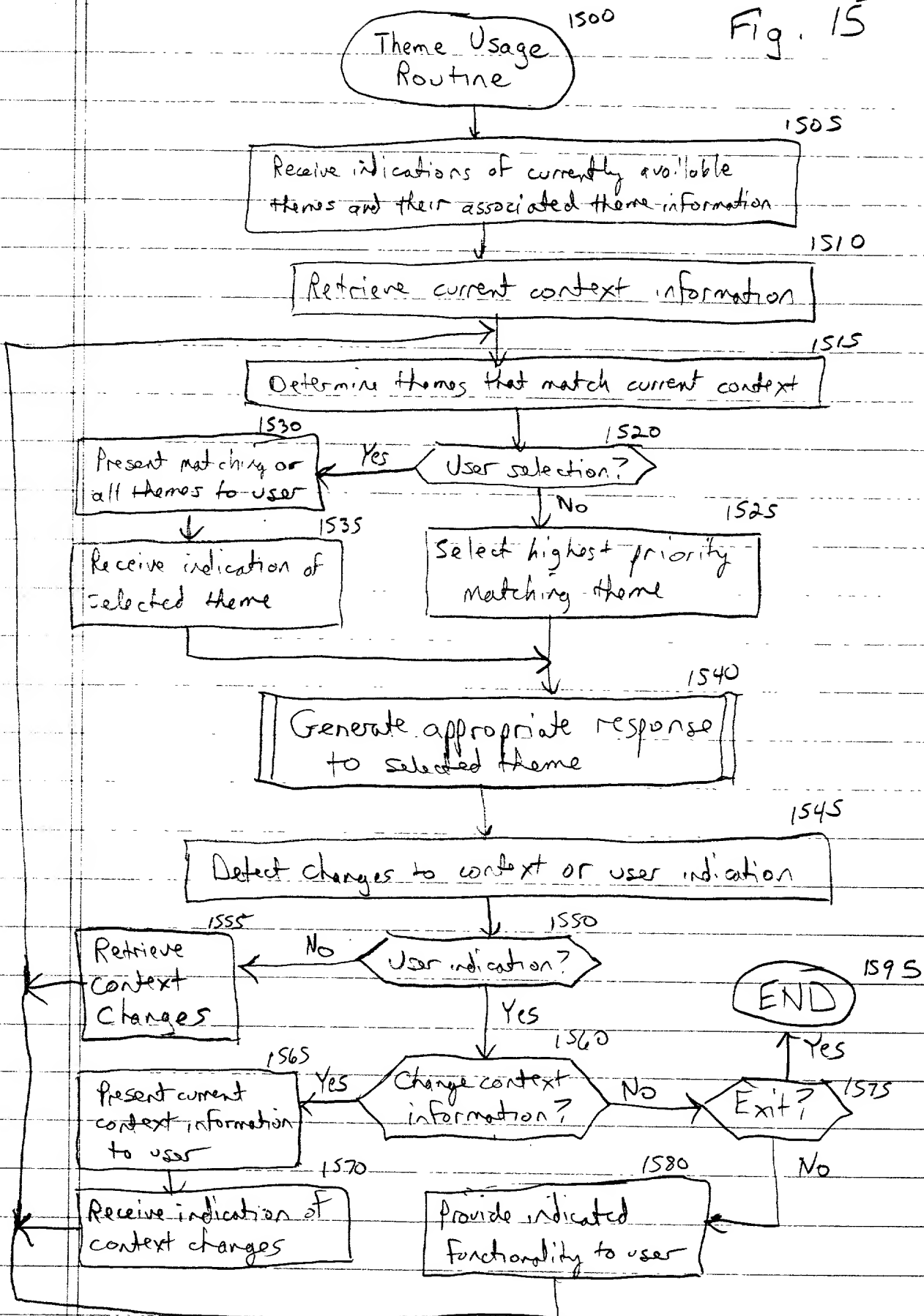


Fig. 16

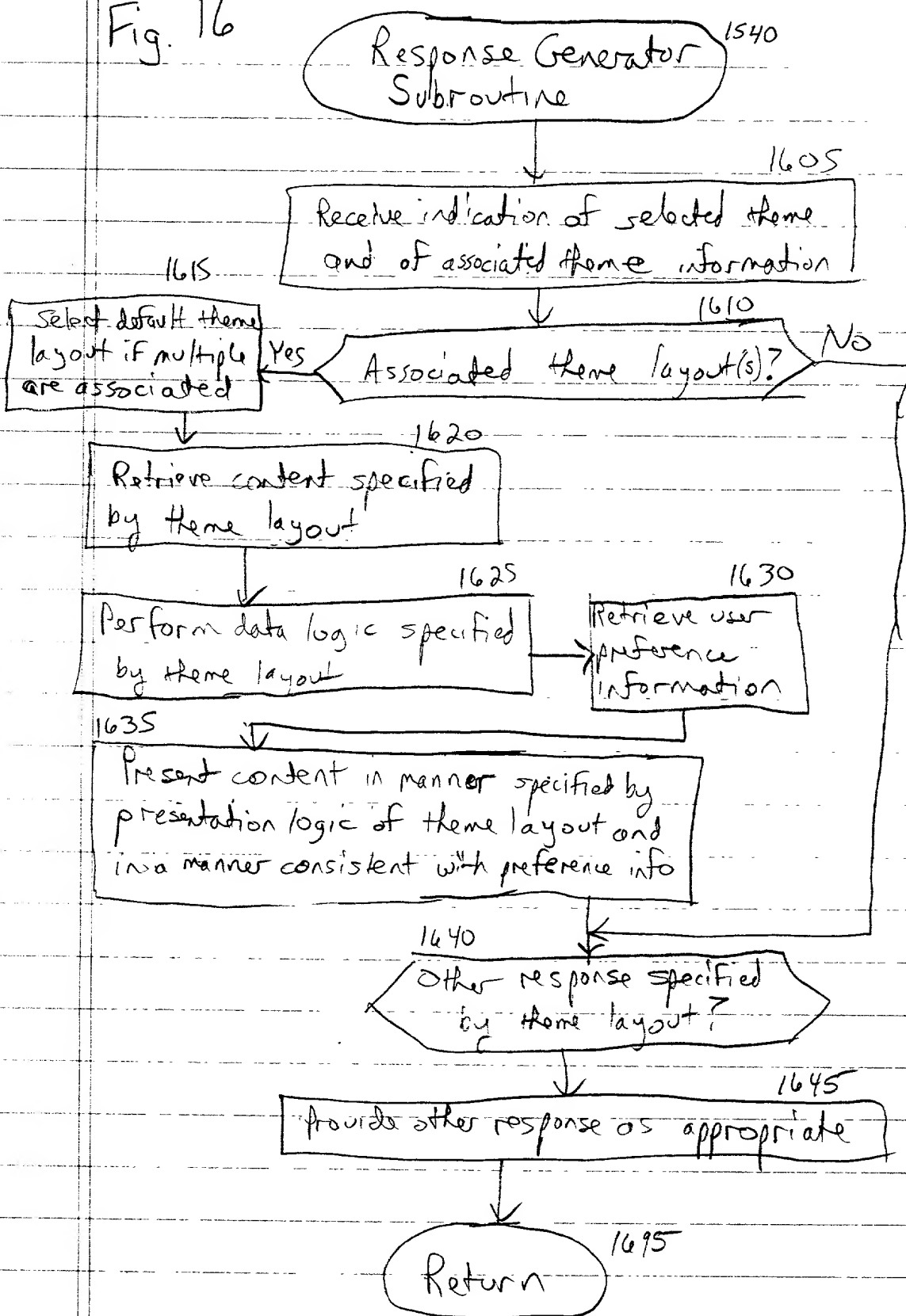
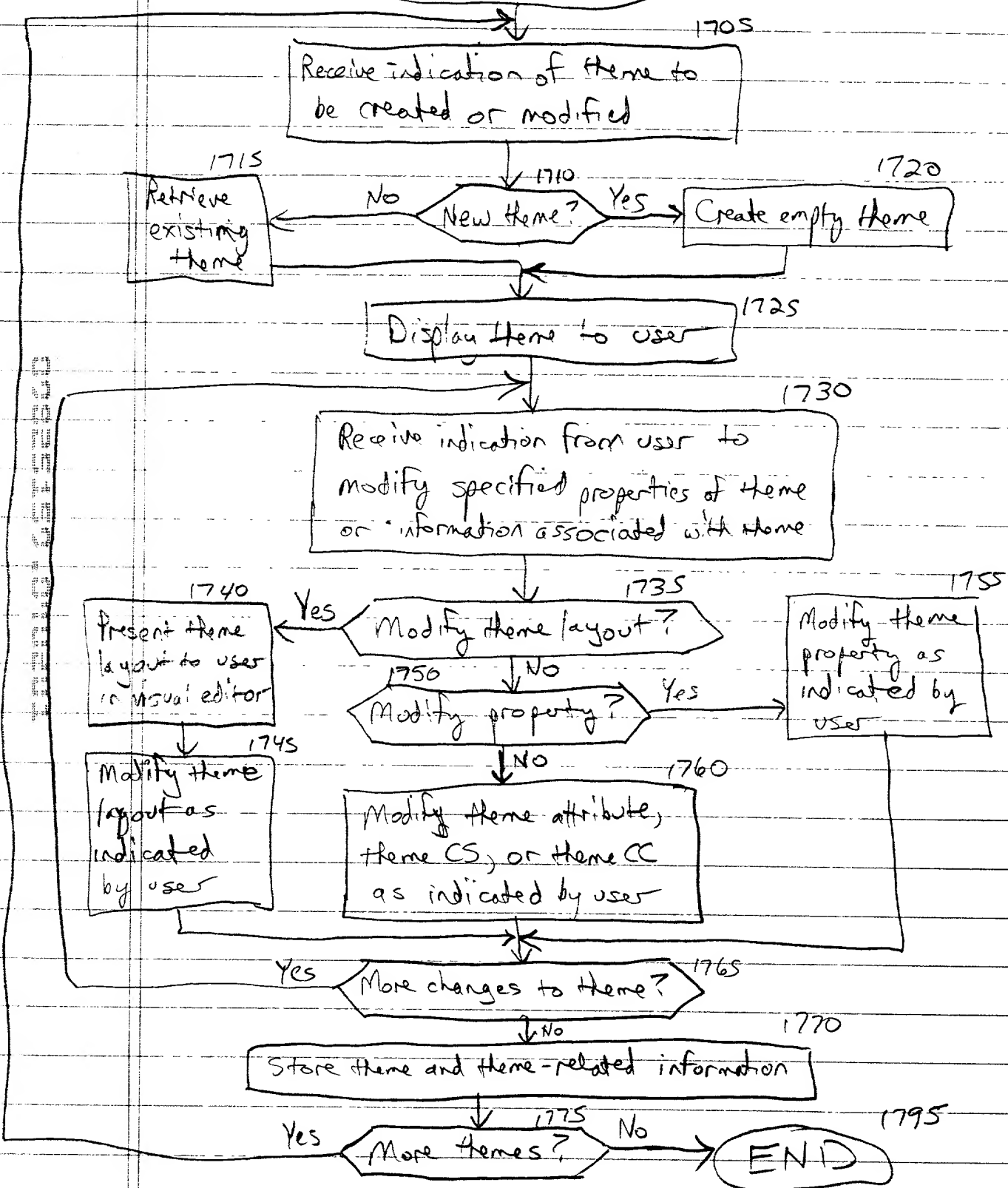
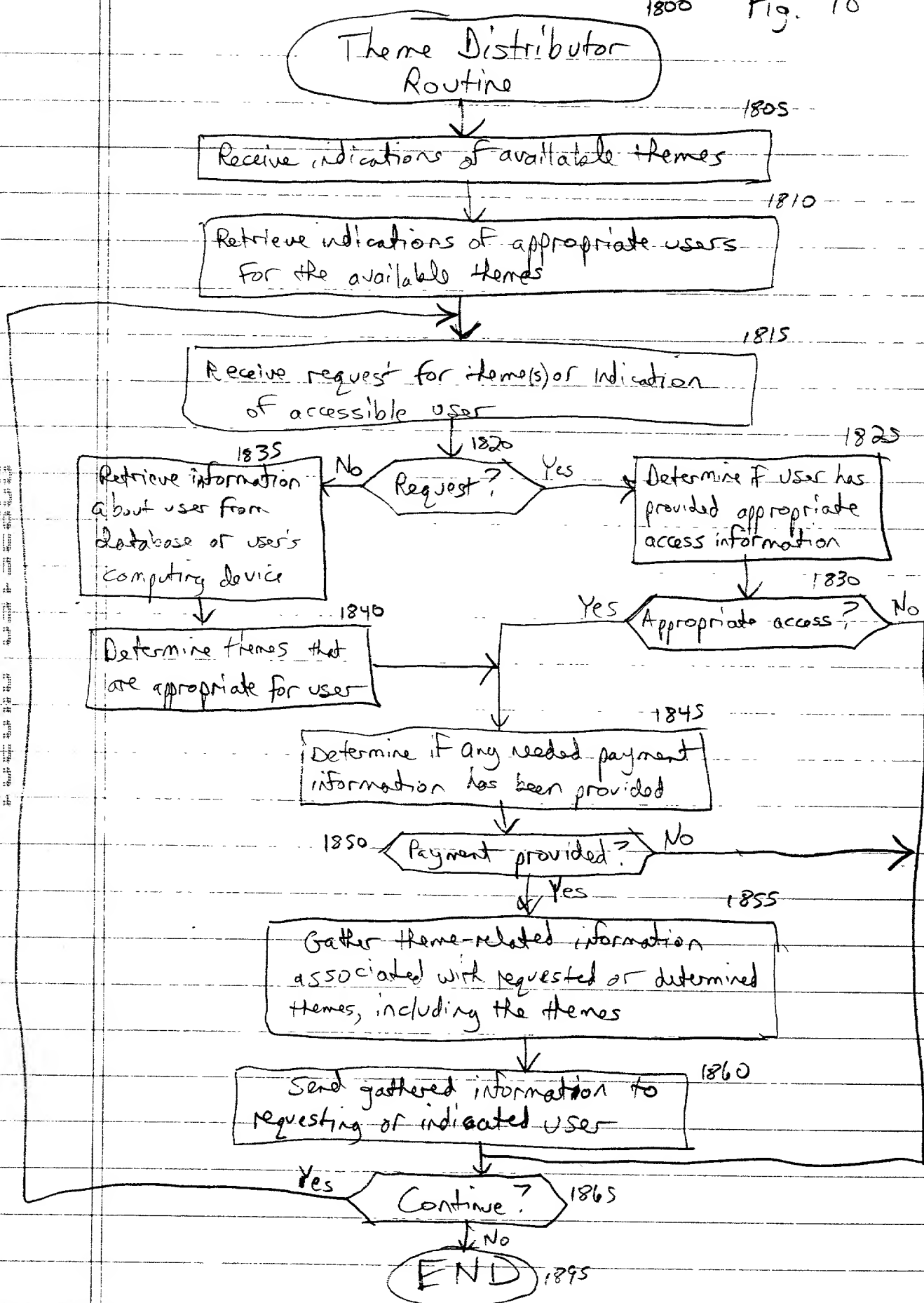


Fig. 17

1700  
Theme Creator/  
Modifier Routine



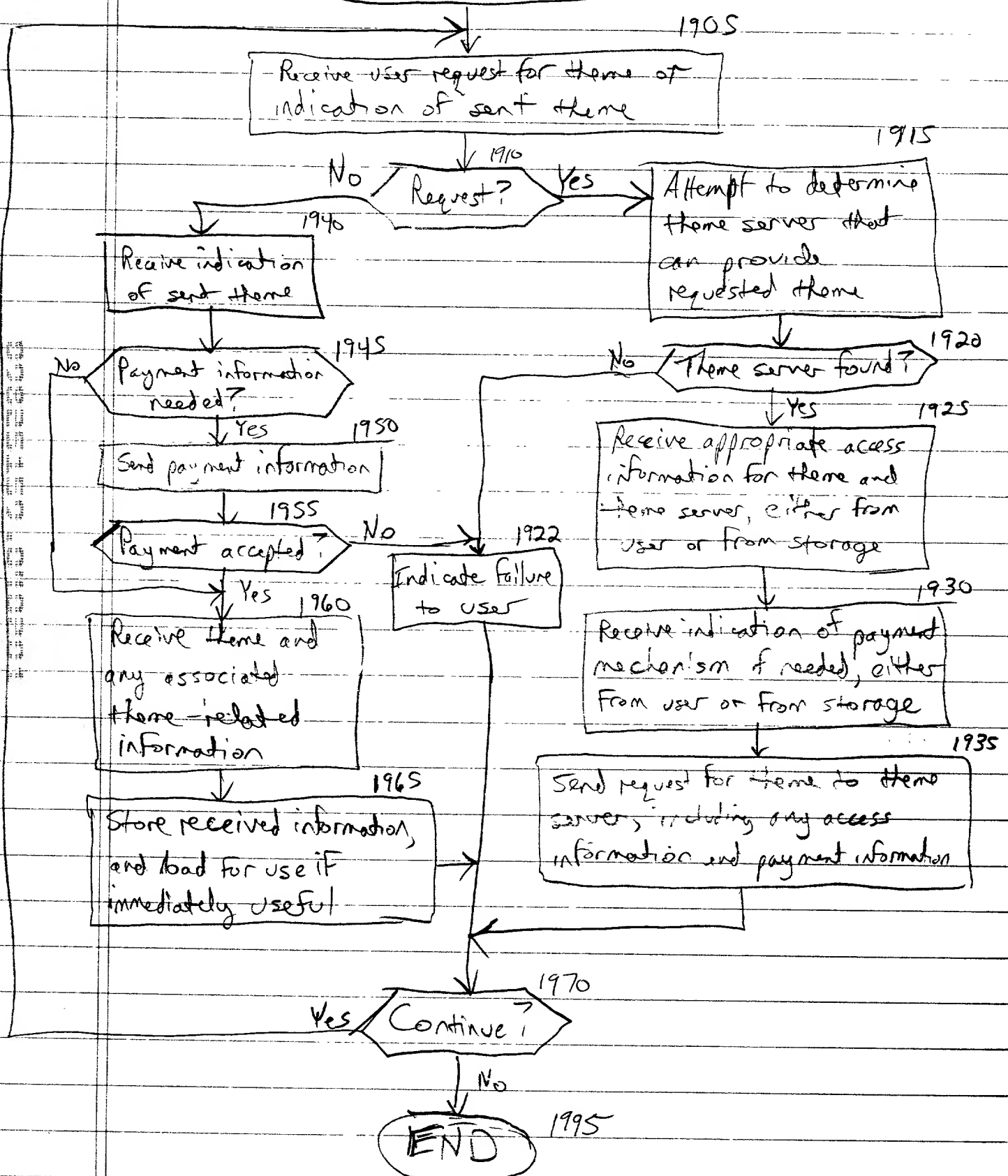
1800 Fig. 18



1700

Fig. 19

# Theme Receiver Routine



2000

Fig. 20

# Automated Theme Customizer Routine

2005

Receive indications of available themes

2010

Repeatedly monitor user actions, including interactions with themes, modifications to themes, and explicit changes to the current theme or the current context

2015

Analyze monitored actions to determine patterns of actions

2020

Any patterns above relevance threshold?

Yes

2025

Retrieve user preference information

2030

Determine modifications to some or all themes that are consistent with patterns above the relevance threshold and with user preferences

2035

Do automated modification?

Yes

2040

Modify themes as determined

2045

Notify user of modifications

Yes

2065

Continue?

No

2095

END

2050

Present suggested modifications to the user

2055

Receive indications of accepted modifications

2060

Modify themes as indicated

2000 2005 2010 2015 2020 2025 2030 2035 2040 2045 2050 2055 2060 2065 2070 2075 2080 2085 2090 2095